

TFW

PATENTS
Attorney Docket No. LT-167

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicants : Gregory Dittmer et al.
Application No. : 10/722,808 Confirmation No. : 8187
Filed : November 26, 2003
For : METHODS AND CIRCUITS FOR PROGRAMMABLE
CURRENT LIMIT PROTECTION
Group Art Unit : 2838

Palo Alto, California 94301
September 20, 2004

Mail Stop: Amendment
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Applicants submit this Supplemental Information Disclosure Statement to provide the Office with information regarding litigation and other proceedings involving patents related to control circuits and methods for maintaining high efficiency over broad current ranges in a switching regulator circuit. U.S. Patent application 08/036,047 (the '047 application), filed March 23, 1993, now U.S. Patent Number 5,481,178 (the '178 patent), is currently the subject of

litigation. This litigation is *Linear Technology Corporation v. Impala, et al.*, United States District Court for the Northern District of California, San Francisco Division, Case No. C-98-1727 VRW. In addition, European Patent 0 617 501 B1, which claims priority from the '047 application, is currently the subject of an appeal from a decision of the Opposition Division to maintain the patent. Furthermore, the Japanese Patent Office issued a notice on February 5, 2003, informing the Assignee of the '047 application that a third party filed references against Japanese Patent Application No. 6-52295 (the Japanese application), which claims priority from the '047 application. The Japanese application was granted on December 12, 2003 as Japanese Patent No. 3501491. Applicants submit this statement to identify documents that have been cited in the litigation and the opposition proceedings and filed against the Japanese application. Should the Office determine that it has a need for further information, Applicants stand ready to assist the Office in satisfying that need.

Pursuant to 37 C.F.R. §§ 1.56, and 1.98, Applicants hereby make of record in the above-identified application the documents listed in the accompanying Form PTO-1449.*

* Applicants' submission of this statement is not an admission that the information herein is, or is considered to be, material to patentability of any presented claim. With respect to cited documents other than patents, Applicants have identified dates or possible date codes that appear on the documents. Applicants' identification of these dates is not an admission that the documents were published by or on the dates identified. Applicants reserve the right to challenge any of the cited documents as prior art.

Defendants in the litigation have cited numerous references, which applicants list below for consideration in the present case. The documents that have been cited by the defendants in the litigation are identified by a double asterisk ("**"). The documents that have been cited in the European Opposition proceedings are identified by a triple asterisk ("***"). The documents that have been filed with the Japanese Patent Office against the Japanese application are identified by a quadruple asterisk ("****").

Some of the documents listed below also were identified in the Information Disclosure Statement filed on August 30, 2004. Those previously-identified documents are identified herein by a double ampersand ("&&"). Because the previously-identified documents were submitted with the Information Disclosure Statement filed on August 30, 2004, those documents are not enclosed herewith.

U.S. Patents

3,458,798	07/29/69	Fang et al.**
3,571,697	03/23/71	Phillips**
3,579,091	05/18/71	Clarke et al.**
3,581,186	05/25/71	Weinberger**
3,582,758	06/01/71	Gunn**
3,585,491	06/1971	Peterson**
3,733,540	05/15/73	Hawkins**
3,772,588	11/1973	Kelly et al.**
3,784,893	01/08/74	Rando**, &&
3,863,128	01/28/75	Wilwerding**
3,879,647	04/22/75	Hamilton et al.**
3,992,638	11/16/76	Sauvanet**
4,013,939	03/1977	Biess et al.**
4,035,710	07/12/77	Joyce**
4,071,884	01/31/78	Maigret**

4,160,288	07/03/79	Stuart et al.**
4,326,245	04/20/82	Saleh**, &&
4,395,675	07/26/83	Toumani**
4,428,015	01/24/84	Nesler**
4,462,069	07/24/84	Becky**
4,479,174	10/23/84	Cates**
4,493,017	01/08/85	Kammiller et al.**
4,519,024	05/21/85	Federico et al.**
4,541,041	09/1985	Park et al.**
4,554,499	11/19/85	Sherman et al.**
4,578,630	03/1986	Grosch**
4,610,521	09/09/86	Inoue**
4,634,956	01/06/87	Davis et al.**
4,672,303	06/09/87	Newton**, &&
4,672,518	06/09/87	Murdock**
4,674,020	06/16/87	Hill**
4,683,529	07/28/87	Bucher, II**
4,709,315	11/24/87	Ramos**
4,712,169	12/08/87	Albach**
4,716,514	12/29/87	Patel**
4,727,308	02/23/88	Huljak et al.** , &&
4,754,385	06/28/88	McDade et al.**
4,801,859	01/31/89	Dishner**
4,813,066	03/14/89	Holtz et al.**
4,814,684	03/21/89	McCurdy**
4,819,122	04/04/89	Gontowski, Jr.** , &&
4,823,070	04/18/89	Nelson**
4,843,532	06/27/89	Freedman**
4,866,587	09/12/89	Wadlington**
4,870,555	09/26/89	White**
4,884,183	11/1989	Sable**
4,902,957	02/20/90	Cassani et al.**
4,922,404	05/01/90	Ludwig et al.** , ***
4,928,200	05/22/90	Redl et al.** , &&
4,929,882	05/29/90	Szepesi** , *** , &&
4,931,716	06/05/90	Jovanovic et al.**
4,996,638	02/26/91	Orr**
5,028,861	07/1991	Pace et al.**
5,034,871	07/23/91	Okamoto et al.** , &&
5,066,900	11/19/91	Bassett**
5,068,575	11/26/91	Dunsmore et al.**
5,081,411	01/14/92	Walker**
5,097,196	03/17/92	Schoneman**

5,128,603	07/07/92	Wölfel**
5,134,355	07/28/92	Hastings**
5,138,249	08/11/92	Capel**
5,144,547	09/01/92	Masamoto**
5,170,333	12/08/92	Niwayama**
5,177,676	01/05/93	Inam et al.**
5,179,511	01/12/93	Troyk et al.**
5,184,129	02/02/93	Fung et al**
5,193,211	03/09/93	Nobusawa**
5,237,606	08/17/93	Ziermann**,***,&&
5,309,078	05/1994	Cameron**,&&
5,396,412	03/07/95	Barlage**,&&
5,408,162	04/18/95	Williams**
5,481,178	01/1996	Wilcox et al.**,&&
5,548,189	08/20/96	Williams**
5,731,694	03/24/98	Wilcox et al.**,&&
5,994,885	11/30/99	Wilcox et al.**,&&
6,304,066	10/16/01	Wilcox et al.**
6,580,258	06/17/03	Wilcox et al.**

Foreign Patent Documents

0 428 377 A2	05/22/91	EPO**
60-32565	02/19/85	Japan**
60-156269	08/16/85	Japan**,***
63-307510	12/15/88	Japan**
3-113986	11/21/91	Japan**
4-42771	02/13/92	Japan**
4-49844	02/19/92	Japan**,***
4-101286	09/01/92	Japan**,***,****,&&
4-128086	11/20/92	Japan**

Other Documents

Analog Devices, Inc., "High Efficiency Synchronous Step-Down Switching Regulators ADP1148, ADP1148-3.3, ADP1148-5," Datasheet, pp. 1-14, 1997**

Archer, William R., "Current-Driven Synchronous Rectifier," Motorola TMOS Power FET Design Ideas, BR316, pp. 9-10, 1985**

Archer, William R., "Current Drives Synchronous Rectifier," EDN, p. 279, 11/28/85 **,***

Blanchard, Richard, et al., "MOSFETs, Schottky Diodes Vie for Low-Voltage-Supply Designs," EDN, p. 197, 06/28/84**

Borghi et al., "Discontinuous Conduction Mode Power Switching Regulator IC," PCI October 1988 Proceedings, pp. 31-41, 10/88**,&&

Brown, Marty, "Practical Switching Power Supply Design," pp. 20-34, Academic Press, Inc., 1990**

Business Wire, "Micro Linear announces first single-chip power controller for notebook computers," 04/16/92**

Casey, L.F., "Circuit Design For 1-10 MHZ DC-DC Conversion," Massachusetts Institute of Technology ScD. Thesis, Fig. 3-15, pp. 73-80, 1989**,&&

Cassani, John C. et al., "Sophisticated Control IC Enhances 1MHz Current Controlled Regulator Performance," Proceedings of HFPC, May 1992, pp. 167-173.**

Chetty, P.R., "DC timers control dc-dc converters" Electronics, pp. 121 & 123, 11/13/75**

Chryssis, George, "High-frequency switching power supplies," pp. 144-152 and 180-181, McGraw-Hill, 1989**

Dell Computer Corporation, "Dell Computer Corporation Introduces Advanced Notebook PC," (alleged to contain UC1895, see Unitrode Advance Information Datasheet 10/05/92), 09/91**

Dinsmore, D., "Dual regulator handles two input voltages," EDN, 01/21/93**

Fisher, R. A. et al., "Performance of Low Loss Synchronous Rectifiers in a Series-Parallel Resonant DC-DC Converter," Proceedings of the Fourth Annual IEEE Applied Power Electronics Conference and Exposition, pp. 240-246, 03/89**

Gauen, Kim, "Synchronous Rectifier Improves Step-Down Converter Efficiency," PCIM, pp. 8, 11-12 & 14-15, 04/93**

Gontowski et al., "Advanced New Integrated Circuits For Current-Mode Control," Proceedings of the Power Electronics Show and Conference, pp. 341-352, 10/86**,&&

Goodenough, F., "Dozing IC Op Amps Wake Up For Input Signal," Electronic Design, 12/05/91**

Goodenough, Frank, "Synchronous Rectifier UPS PC Battery Life," Electronic Design, pp. 47-53, 04/16/92**

Goodenough, Frank, "Low-Voltage Analog ICs Wait in the Wings," Electronic Design, 09/03/92**

Goodenough, F., "Raise Switcher Efficiency Above 90%," Electronic Design, 01/21/93**,***

Gottlieb, I. M., "Practical Power-Control Techniques," Howard W. Sams & Co., pp. 116-120, 1987**

Gottlieb, I. M., "Electronic Power Control," TAB Books, pp. 107-111, 1991**

Gracie, Paul D., "Intermittent Converter Saves Power," EDN, p. 151, 09/01/89**

Graf, Rudolf F., "Modern Dictionary of Electronics," 6th Edition, pp. 402-03, 1984***

Grant, Duncan A. et al., "POWER MOSFETS, Theory and Application," pp. 239-256, Wiley-Interscience, 1989**

Harris Semiconductor, Hodgins et al., "HIP 5060 Family of Current Mode Control ICs Enhance 1 MHZ Regulator Performance," Application Note AN9212.1, pp. 11-191 to 11-197, 1992**

Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 04/94**

Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Preliminary Datasheet, 01/92**

Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 05/92**

Hewett, S., "Improved Switched Mode Power Supply Regulation by Eliminating Turn-off Spikes," IBM Technical Disclosure Bulletin, Vol. 31, No. 4, pp. 97-98, 09/88**

Hnatek, Eugene R., "Design of Solid State Power Supplies," Third Edition, pp. 65-70, Van Nostrand Reinhold, 1989**

Horowitz & Hill, "The Art of Electronics," pp. 356-359, Cambridge University Press, 1989**

Huffman, B., "Efficiency and Power Characteristics of Switching Regulator Circuits," Application Note 46, Linear Technology, 11/91**

Ikeda, S. et al., "Power MOSFET for Switching Regulator," International Telecommunications Energy Conference, 10/82**

Impala Linear, "ILC6311 Synchronous 3A Switching Regulator With Auto-Light Load Mode," Preliminary Datasheet, pp.30-38, January 1997**

Impala Linear, "ILC6350 Dual Output Synchronous Step-Down DC-DC Controller," Advanced Information Preliminary Datasheet, pp. 1-6, January 1997**

Impala Linear, "ILC6310 Synchronous Step-down DC-DC Converter With Auto Light-Load Mode Select," Final Datasheet, pp. 21-38, June 1996**

Impala Linear, "ILC6330 13A Adjustable Synchronous DC-DC Controller," Preliminary Datasheet, pp. 39-41, June 1996**

International Rectifier, "IR Application Note AN-978, HV Floating MOS Gate Driver ICs, Full Bridge With Current Mode Control," Application Note from web page, Date Unknown**, &&

International Rectifier, "IR Application Note AN-978, HV Floating MOS-Gate Driver ICs, A Typical Block Diagram," Application Note from web page, Date Unknown**

International Rectifier, Clemente et al., "HV Floating MOS-Gate Driver IC," Application Note AN-978A, 1990**

Intersil, "ISL6223 Mobile Microprocessor CORE Voltage Regulator Multi-Phase Buck PWM Controller," Datasheet, 03/01**, &&

Kassakian, J. et al., "Principles of Power Electronics," pp. 103-165, Addison-Wesley Publishing Company, 1991**

Kerridge, Brian, "Battery power breeds efficient regulators," EDN, pp. 103-108, 03/18/93**

Lee, Y. S. and Cheng, Y. C., "A 580 kHz switching regulator using on-off control," Journal of the Institution of Electronic and Radio Engineers, Vol. 57, No. 5, pp. 221-226, 09/87**

Lee, et al., "Design of Switching Regulator with Combined FM and On-Off Control," IEEE Transactions on Aerospace and Electronic Systems, Vol. AES-22, No. 6, pp. 725-731, 11/86**

Linear Technology, "LT1074 Switching Regulator," Preliminary Datasheet, 06/89**

Linear Technology, "LT1072 1.25A High Efficiency Switching Regulator," Datasheet, 1990**

Linear Technology, "New Device Cameos," Linear Technology Magazine, 10:18-19 1992**

Linear Technology, "LTC1148/LTC1148-3.3/LTC1148-5 High Efficiency Synchronous Stepdown Switching Regulator," Preliminary Datasheet, 11/92****

Linear Technology, Wilcox, M., "LT1158 Half Bridge N-Channel Power MOSFET Driver," Datasheet, 1992**, &&

Linear Technology, Williams, J., Application Note 29, "Some Thoughts on DC-DC Converters," 1990 Linear Applications Handbook, pp. AN29-1 to AN29-44, 10/88**

Linear Technology, "LT1524/LT3524 Regulating Pulse Width Modulator," 1990**

Linear Technology, "LT1432 5V High Efficiency Step-Down Switching Regulator Controller," 1992 Linear Databook Supplement, pp.4-145 to 4-171.**,&&

Linear Technology, "LT1170/LT1171/LT1172 100kHz 5A, 2.5A, 1.25A High Efficiency Switching Regulators," Data Sheet, 1991**

Linear Technology, "LT1271/LT1269 4A High Efficiency Switching Regulators," Data Sheet, 1992**

Linear Technology, Pietkiewicz et al., "DC-DC Converters for Portable Computers," Design Note 52, 1991**

Linear Technology, Nelson, C., App. Note 19, "LT-1070 Design Manual," 06/86**,&&

Linear Technology, "LTC1873 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller With 5-Bit VID," Datasheet, 1999**,&&

Linear Technology, "LTC1878 High Efficiency Monolithic Synchronous Step-Down Regulator," Initial Release, Final Electrical Specifications, May 2000**,&&

Linear Technology, "LTC1702 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller," Datasheet, 1999**,&&

Linear Technology, Williams, J., App. Note 25, "Switching Regulators for Poets," 09/87**

Linear Technology, "LT1846/1847, LT3846/3847 Current Mode PWM Controller," Datasheet, 1990**

Linear Technology, "LTC1703 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller with 5-Bit VID," Datasheet, 1999**,&&

Linear Technology, "LTC1735 High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1998**

Linear Technology, "LTC1736 5-Bit Adjustable High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1999**

Linear Technology, "LTC1775 High Power No R_{SENSE} TM Current Mode Synchronous Step-Down Switching Regulator," Datasheet, 1999**

Linear Technology, Williams, J., Application Note 35, "Step Down Switching Regulators," 1990 Linear Applications Handbook, pp. AN35-1 to AN35-32, 8/89**

Linear Technology, "LTC1436A/LTC1436A-PLL/LTC1437A High Efficiency Low Noise Synchronous Step-Down Switching Regulators," Datasheet, 1996**

Linear Technology, "LTC1438/LTC1439 Dual High Efficiency, Low Noise, Synchronous Step-Down Switching Regulators," Datasheet, 1997**

Linear Technology, Nelson., C., "The LT1432:5 Volt Regulator Achieves 90% Efficiency," Linear Technology Magazine, Vol. 2, No. 1, pp. 18-19, 2/92**

Linear Technology, Pietkiewicz, S., "A Low-Voltage, Micro-Power 1 Amp Switching Regulator," presented at the International Solid State Circuits Conference, 1990**

Linear Technology, LT1073 Micropower DC-DC Converter Adjustable and Fixed 5V, 12V," Datasheet, 1991**

Linear Technology, "LTC1538-AUX/LTC1539 Dual High Efficiency, Low Noise, Synchronous, Step-Down Switching Regulators," Datasheet, 1996**

Linear Technology, "LTC1142/LTC1142L/LTC1142HV Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995**

Linear Technology, "LTC1149/LTC1149-3.3/LTC1149-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1993**

Linear Technology, "LTC1627 Monolithic Synchronous Step-Down Switching Regulator," Datasheet, 1998**, &&

Linear Technology, "LTC1159/LTC1159-3.3/LTC1159-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1994**

Linear Technology, "LTC1435 High Efficiency Low Noise Synchronous Step-Down Switching Regulator," Datasheet, 1996**

Linear Technology, "LTC1267/LTC1267-ADJ/LTC1267-ADJ5 Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995**

Linear Technology, "LTC1266/LTC1266-3.3/LTC1266-5 Synchronous Regulator Controller for NB or P- Channel MOSFETs," Datasheet, 1995**

Markus, John, "Guidebook of Electronic Circuits," pp. 647 & 649, 1971**

Maxim Integrated Products, Inc., "MAX638 Fixed +5V CMOS Step-Down Switching Regulator," Maxim 1989 Integrated Circuits Data Book, pp. 6-57 to 6-64, 1989**

Maxim Integrated Products, Inc., "MAX782/MAX786 Notebook Computer Power Supplies," Advance Information Data Sheet, February 1993, pp.1-8.**

Maxim Integrated Products, "MAX1630-MAX1635 Multi-Output, Low-Noise Power Supply Controllers for Notebook Computers," Datasheet Rev. 3; 04/97**

Maxim Integrated Products, "MAX798 High-Accuracy Step-Down Controller With Synchronous Rectifier for CPU Power," Datasheet, 12/96**

Maxim Integrated Products, "MAX796/MAX797/MAX799 Step-Down Controllers With Synchronous Rectifier for CPU Power," Datasheet Rev. 3a; 11/97**

Maxim Integrated Products, Inc., MAX782, Addendum to Advance Information Sheet and EV Kit Document, bearing Bates numbers L07760 -007785, contains dates in 2/93 and 3/93 (MAX782 Advance Information Data Sheet cited above)**

Maxim Integrated Products, Inc., "MAX635/36/37 Fixed Output CMOS Inverting Switching Regulators," Maxim 1989 Integrated Circuits Data Book, pp. 6-49 to 6-46, 1989**

Maxim Integrated Products, Inc., "MAX639 High-Efficiency, +5V Adjustable Step-Down Switching Regulator," Datasheet, 12/91**

Maxim Integrated Products, Inc., "MAX635/636/637 Preset/Adjustable Output CMOS Inverting Switching Regulators," Datasheet, Date Unknown**

Maxim Integrated Products, "MAX782 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet Rev. 2; 5/94**

Maxim Integrated Products, Inc., "MAX783 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet, 05/94**

Maxim Integrated Products, "MAX887 100% Duty Cycle, Low-Noise, Step-Down PWM DC-DC Converter," Datasheet, 09/96**, &&

Maxim Integrated Products, Inc., "MAX746 High-Efficiency, PWM, Step-Down, N-Channel DC-DC Controller," Datasheet, 11/93 **

Maxim Integrated Products, Inc., "MAX747 High-Efficiency PWM, Step-Down P-Channel DC-DC Controller," Datasheet, 09/93**

Maxim Integrated Products, Inc., "MAX777L/MAX778L/MAX779L Low-Voltage Input, 3V/3.3V/5V/

Adjustable Output, Step-Up DC-DC Converters," Datasheet,
07/96**

Maxim Integrated Products, "MAX767 5V-to-3.3V,
Synchronous, Step-Down Power-Supply Controller," Datasheet Rev.
2; 08/94**

Meakin, Mike, "The LM3578 Switching Power Regulator,"
Electronic Engineering, pp. 47-52, 07/86**

Micro Linear Corporation, "ML4861 Low Voltage Boost
Regulator," Preliminary Datasheet, July 1992**, &&

Micro Linear Corporation, "ML 4822 DC/DC Converter
Controller for Portable Computers," Datasheet, 08/91**

Micro Linear Corporation, "ML4862 EVAL User's Guide,"
06/92**

Micro Linear Corporation, "ML4873 Battery Power
Control IC," Datasheet, 01/97 (preliminary version 03/93 -
cited below)**

Micro Linear Corporation, "ML4862 Battery Power
Control IC," Datasheet, 03/97**

Micro Linear Corporation, "ML4862 Battery Power
Control IC," Advance Information Datasheet, 07/92**

Micro Linear Corporation, "ML4860 Battery to DC Power
Control IC for Portable Systems," Advanced Information, 02/92**

Micro Linear Corporation, "ML4873 Battery Power
Control IC," Advance Information Data Sheet, March 15, 1993,
pp.1-8.**

Myers, R. and Peck, R., "200-kHz Power FET Technology
in New Modular Power Supplies," Hewlett-Packard Journal,
08/81**

NASA Jet Propulsion Laboratory,* "Synchronous Half-
Wave Rectifier," 7/89**

National Semiconductor Corporation,
"LM1578/LM2578/LM3578 Switching Regulator," Preliminary
Datasheet, 1987**

Patel, Raoji, "Using Bipolar Synchronous Rectifiers
Improves Power Supply Efficiency," Proceedings of the Power
Sources Conference, 11/84**

Patel, R., "Bipolar synchronous rectifiers cut supply
losses," EDN, 04/04/85**

Quinnell, Richard A., "Analog IC Combines Five
Functions for Battery Power Management," EDN, 04/23/92**

Redl et al., "Frequency Stabilization and
Synchronization of Free-Running Current-Mode Controlled
Converters," PESC '86 Record, pp. 519-530, 1986**

Redl, et al., "Overload-Protection Methods For
Switching-Mode DC/DC Converters: Classification, Analysis, and
Improvements," PESC '87 Record, pp. 107-118, 1987**, &&

Rippel, W.E., "Synchronous Half-Wave Rectifier," NASA
Jet Propulsion Laboratory Technical Support Package Vol. 13,
No. 7, Item #15, 7/89**,***

Sakai, E. and Harada, K., "A New Synchronous
Rectifier Using Bipolar Transistor Driven by Current
Transformer," Fourteenth International Telecommunications
Energy Conference, pp. 424-429, 10/92**

Sakai, E. and Harada, K., "Synchronous Rectifier
Using a Bipolar Transistor Driven by Current Transformer,"
Journal of the Society of Electronic Data Communication, Vol.
J-74-B-I, No. 8, pp. 639-646, 08/91 (in Japanese, with
translation)**

Savant, C.J., Jr., et al., "Electronic Design:
Circuits and Systems," pp. 612-613, The Benjamin/Cummings
Publishing Co., 1991**

Shepard, J., "Powering portable systems," EDN,
11/05/92**

Siliconix, "Si91XX Synchronous Buck Controller,"
Objective Specification, 12/20/90**

Siliconix, "Siliconix Si9110/Si9111," Datasheet,
10/87**

Siliconix, "Synchronous Rectification," Design Ideas,
10/80**

Siliconix, "Si9150 Synchronous Buck Regulator
Controller, S-42677, Rev. D," Datasheet, 2/14/95**

Siliconix, "High-Efficiency Buck Converter for
Notebook Computers," Application Note AN92-4, Date Unknown**

Siliconix, "Designing DC/DC Converters with the
Si9110 Switchmode Controller," Siliconix Power Products Data
Book, 1991**

Siliconix, "Si9150CY/BCY Synchronous Buck Converter
Controller," Preliminary Data Sheet, 10/08/92**

Siliconix, "Si9150 Synchronous Buck Converter
Controller," Objective Specification, handwritten pp. 7-17,
9/10/91**

Siliconix, Si9150 documents bearing Bates numbers
U040269-71, 9104**

Soclof, Sidney, "Applications of Analog Integrated
Circuits," Figure 2.25, pp. 74-75, Prentice-Hall, Inc. 1985**

Sokal et al., "Control Algorithms and Circuit Designs
For Optimally Flyback-Charging an Energy-Storage Capacitor,"
IEEE Fifth Applied Power Electronics Conference, pp. 295-301,
1990**

Steigerwald, R., "High-Frequency Resonant Transistor
DC-DC Converters," IEEE Transactions on Industrial Electronics,
Volume IE-31, Number 2, pp. 181-191, 05/84**

Taylor, "Flyback Converter," Electronic Engineering,
p. 23, July, 07/76**

Toyoda, "SB3012P Step Down DC-DC Converter Controller," Datasheet, March 1997**

Toyoda, "SB3030P Step Down DC-DC Converter Controller," Datasheet, December 1996**

Toyoda, "SB3011P Step Down DC-DC Converter Controller," Datasheet, March 1997**

Toyoda, "SB3052P Dual Channel Step Down DC-DC Converter Controller," Datasheet, February 1998**

Toyoda, "SB3020P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997**

Toyoda, "SB3010P Synchronous Stepdown DC-DC Converter Controller," Datasheet August 10, 1995**

Toyoda, "SB3013P Step Down DC-DC Converter Controller," Datasheet, March 1997**

Toyoda, "SB3050P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997**

Toyoda, "SB3031P Step Down DC-DC Converter Controller," Datasheet, December 1996**

Uchida, Takahito, "Control Circuit for Switching Regulator," Japanese Inventor Associated Disclosed Technology Publication No. 92-2362, published 2/15/92 (in Japanese, with translation)**

Unitrode, "Using Bipolar Synchronous Rectifiers Improves Power Supply Efficiency," Application Note U-103, 1989-1990 Unitrode Semiconductor Databook and Application Notes, pp. 12-88 to 12-94, 6/85**

Unitrode, "UC1846/7, UC2846/7, UC3846/7 Current Mode PWM Controller," Datasheet, 1/97**

Unitrode, "UCC29421/2, UCC39421/2 Multimode High Frequency PWM Controller," Preliminary Datasheet, 10/1999**, &&

Unitrode, "UC1874-1,-2, UC2874-1,-2, UC3874-1,-2 High Efficiency, Synchronous Step-Down (Buck) Controllers," Datasheet, 02/1998**

Unitrode, "UC1895, UC2895, UC3895 Synchronous Rectifier Buck PWM Controller," Advance Information Datasheet, 10/06/92**

Unitrode, "UC1870-1/-2, UC2870-1/-2, UC3870-1/-2 High Efficiency, Synchronous, Step-Down (Buck) Controllers," Datasheet, 08/1998**

Unitrode, "UCC3941-3/-5/-ADJ 1V Synchronous Boost Converter," Preliminary Datasheet, 3/97**

Unitrode, "UCC19411/2/3, UCC29411/2/3, UCC39411/2/3 Low Power Synchronous Boost Converter," Preliminary Datasheet, 4/98**

Unitrode, "UCC1582, UCC2582, UCC3582 High Efficiency Synchronous, Step Down Controller," Preliminary Datasheet, 1/97**, &&

Wilcox, M., "The LT1158: Low Voltage, N-Channel Bridge Design Made Easy," Linear Technology Magazine, Vol. 2, No. 1, 2/92**

Williams, J. and Huffman, B., "Proper instrumentation eases low-power dc/dc converter design," EDN, 10/27/88**

Williams, J., "Basic Principles and Ingenious Circuits Yield Stout Switchers," EDN, 01/18/90**

Williams, J., "Signal conditioning circuits use *power design techniques," EDN, 08/20/87**

Williams, J., "Employ pulse-width modulators in a wide range of controllers," EDN, 09/02/81**

Williams, J., "Switching regulator takes on more power," Electronic Product Design, 01/86**

Williams, J., "Design dc-dc converters to catch noise at the source," Electronic Design, 10/15/81**

Williams, J., "Conversion techniques adapt voltages to your needs," EDN, 11/10/82**

Williams, J., "Special circuit-design techniques enhance regulator performance," EDN, 09/01/83**, &&

Williams, J., "Use low-power design methods to condition battery outputs," EDN, 10/18/84**

Williams, J., "Chopper amplifier improves operation of diverse circuits," EDN, 03/07/85**

Williams, J., "Refine V/F-converter operation with novel design techniques," EDN, 05/30/85**

Williams, J. and Huffman, B., "Design dc/dc converters for power conservation and efficiency," EDN, 11/10/88**

Williams, J. and Waller, B., "Performance-Enhancement Techniques for Three-Terminal Regulators," New Electronics, 10/04/83**

Williams, J. and Huffman, B., "Switched-capacitor networks simplify dc/dc-converter designs," EDN, 11/24/88**

Williams, J., "Regulator IC speeds design of switching power supplies," EDN, 11/12/87**

Williams, J., "Micropower circuits assist low-current signal conditioning," EDN, 08/06/87**

Williams, J. and Huffman, B., "Precise converter designs enhance system performance," EDN, 10/13/88**

Williams, J. and Dendinger, S., "Simplify feedback controllers with a 2-quadrant PWM IC," EDN, 05/26/83**, &&

Williams, J., "Bridge forms synchronous rectifier," EDN**

Williams, J., "Designing supplies for powering LCD backlighting," EDN, 10/29/92**

Williams, J., "1.5 to 5V converter supplies 200mA,"
EDN, 10/15/92**

Williams, J., "Design linear circuits that serve
digital system needs," EDN, 04/27/89**

Williams, J., "Clever techniques improve thermocouple
measurements," EDN, 05/26/88**

Williams, J., "Design techniques extend V/F-converter
performance," EDN, 05/16/85**

Williams, J., "Design linear circuits for 5V
operation," EDN, 05/02/85**

Williams, J., "Considerations for Five Volt Linear
Circuits," Professional Program Session Record 20, Circuits for
Analog Signal Processing and Data Conversion is Single +5V
Supply Systems, Wescon/85, 11/85**

Williams, J., "Analog circuits operate from a 1.5V
cell," EDN, 09/19/85**

Williams, J., "Astute designs improve efficiencies of
linear regulators," EDN, 08/17/89**

Williams, J., "Galvanically isolated switching
supplies provide high power," EDN, 11/26/87**

Williams, J., "Correcting power-supply problems,"
EDN, 10/10/91**

Pursuant to the PTO's waiver of the requirement under
37 CFR 1.98 (a)(2)(i), 1276 OG 55, applicants have not
submitted copies of each cited U.S. patent and each U.S. patent
application publication. Copies of the aforementioned foreign
patent publications and other documents, which are listed on
the accompanying Form PTO-1449, are enclosed herewith.

It is respectfully requested that these documents be (1) fully considered by the Patent and Trademark Office during the examination of this application; and (2) printed on any patent that may issue on this application. Applicants request that a copy of Form PTO-1449, as considered and initialed by the Examiner, be returned with the next communication.

An early and favorable action is respectfully requested.

Respectfully submitted,

Chi-Hsin Chang

Chi - Hsin Chang

Reg. No. 52,717

Agent for Applicants

Mark D. Rowland

Reg. No. 32,077

Attorney for Applicants

FISH & NEAVE

Customer No. 1473

1251 Avenue of the Americas

New York, New York 10020-1105

Tel.: (650) 617-4000

Fax: (212) 596-9090

I hereby Certify that this
Correspondence is being
Deposited with the U.S.
Postal Service as First
Class Mail in an Envelope
Addressed to : HON.
COMMISSIONER FOR PATENTS,
P.O. BOX 1450, Alexandria,
VA 22313-1450 on:

9.20.04

Date of Deposit

Lorraine Cole

Name of Person Signing

Lorraine Cole

Signature of Person Signing

9.20.04

Date of Signature



Rev. 04/01

PATENTS
Docket No. LT-167

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Gregory Dittmer et al.
Application No.: 10/722,808 Confirmation No.: 8187
Filed : November 26, 2003
For : METHODS AND CIRCUITS FOR PROGRAMMABLE
CURRENT LIMIT PROTECTION
Group Art Unit : 2838

Mail Stop: Amendment
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER FOR
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Transmitted herewith is a Supplemental
Information Disclosure Statement in the above-identified
application. This Statement is submitted:

- ☐ [] within three months of the application filing
date;
- ☒ [X] more than three months from the application
filing date but before the mailing date of
the first Office Action on the merits.

In accordance with 37 C.F.R. § 1.97, submission
of this Statement requires no fee. However, if for any
reason a fee is due, the Director is hereby authorized to
charge payment of any fees required in connection with this

Supplemental Information Disclosure Statement to Deposit
Account No. 06-1075. A duplicate copy of this letter is
transmitted herewith.

Respectfully submitted,

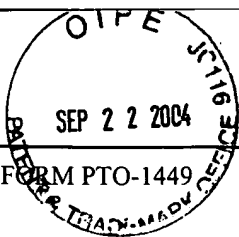
Chi Hsin Chang
Chi - Hsin Chang
Reg. No. 52,717
Agent for Applicants

Mark D. Rowland
Reg. No. 32,077
Attorney for Applicants

FISH & NEAVE
Customer No. 1473
1251 Avenue of the Americas
New York, New York 10020-1105
Tel.: (650) 617-4000
Fax: (212) 596-9090

I hereby Certify that this
Correspondence is being
Deposited with the U.S.
Postal Service as First
Class Mail in an Envelope
Addressed to : HON.
COMMISSIONER FOR PATENTS,
P.O. BOX 1450, Alexandria,
VA 22313-1450 on:

9-20-04
Date of Deposit
Lorraine Coke
Name of Person Signing
[Signature]
Signature of Person Signing
9-20-04
Date of Signature



FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE
STATEMENT BY APPLICANTATTY. DOCKET NO.
LT-167SERIAL NO.
10/722,808APPLICANT
Dittmer et al.FILING DATE
November 26, 2003GROUP
2838

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	3,458,798	07/29/69	Fang et al.			
	3,571,697	03/23/71	Phillips			
	3,579,091	05/18/71	Clarke et al.			
	3,581,186	05/25/71	Weinberger			
	3,582,758	06/01/71	Gunn			
	3,585,491	06/1971	Peterson			
	3,733,540	05/15/73	Hawkins			
	3,772,588	11/1973	Kelly et al.			
	3,784,893	01/08/74	Rando			
	3,863,128	01/28/75	Wilwerding			
	3,879,647	04/22/75	Hamilton et al.			
	3,992,638	11/16/76	Sauvanet			
	4,013,939	03/1977	Biess et al.			
	4,035,710	07/12/77	Joyce			
	4,071,884	01/31/78	Maigret			
	4,160,288	07/03/79	Stuart et al.			
	4,326,245	04/20/82	Saleh			
	4,395,675	07/26/83	Toumani			
	4,428,015	01/24/84	Nesler			
	4,462,069	07/24/84	Becky			
	4,479,174	10/23/84	Cates			
	4,493,017	01/08/85	Kammiller et al.			
	4,519,024	05/21/85	Federico et al.			
	4,541,041	09/1985	Park et al.			
	4,554,499	11/19/85	Sherman et al.			
	4,578,630	03/1986	Grosch			
	4,610,521	09/09/86	Inoue			
	4,634,956	01/06/87	Davis et al.			

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,672,303	06/09/87	Newton			
	4,672,518	06/09/87	Murdock			
	4,674,020	06/16/87	Hill			
	4,683,529	07/28/87	Bucher, II			
	4,709,315	11/24/87	Ramos			
	4,712,169	12/08/87	Albach			
	4,716,514	12/29/87	Patel			
	4,727,308	02/23/88	Huljak et al.			
	4,754,385	06/28/88	McDade et al.			
	4,801,859	01/31/89	Dishner			
	4,813,066	03/14/89	Holtz et al.			
	4,814,684	03/21/89	McCurdy			
	4,819,122	04/04/89	Gontowski, Jr.			
	4,823,070	04/18/89	Nelson			
	4,843,532	06/27/89	Freedman			
	4,866,587	09/12/89	Wadlington			
	4,870,555	09/26/89	White			
	4,884,183	11/1989	Sable			
	4,902,957	02/20/90	Cassani et al.			
	4,922,404	05/01/90	Ludwig et al.			
	4,928,200	05/22/90	Redl et al.			
	4,929,882	05/29/90	Szepesi			
	4,931,716	06/05/90	Jovanovic et al.			
	4,996,638	02/26/91	Orr			
	5,028,861	07/1991	Pace et al.			
	5,034,871	07/23/91	Okamoto et al			
	5,066,900	11/19/91	Bassett			
	5,068,575	11/26/91	Dunsmore et al.			

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,081,411	01/14/92	Walker			
	5,097,196	03/17/92	Schoneman			
	5,128,603	07/07/92	Wölfel			
	5,134,355	07/28/92	Hastings			
	5,138,249	08/11/92	Capel			
	5,144,547	09/01/92	Masamoto			
	5,170,333	12/08/92	Niwayama			
	5,177,676	01/05/93	Inam et al.			
	5,179,511	01/12/93	Troyk et al.			
	5,184,129	02/02/93	Fung et al			
	5,193,211	03/09/93	Nobusawa			
	5,237,606	08/17/93	Ziermann			
	5,309,078	05/1994	Cameron			
	5,396,412	03/07/95	Barlage			
	5,408,162	04/18/95	Williams			
	5,481,178	01/1996	Wilcox et al.			
	5,548,189	08/20/96	Williams			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	0 428 377 A2	05/22/91	EPO				
	60-32565	02/19/85	Japan				
	60-156269	08/16/85	Japan				
	63-307510	12/15/88	Japan				
	3-113986	11/21/91	Japan				
	4-42771	02/13/92	Japan				
	4-49844	02/19/92	Japan				

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
	4-101286	09/01/92	Japan			
	4-128086	11/20/92	Japan			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Analog Devices, Inc., "High Efficiency Synchronous Step-Down Switching Regulators ADP1148, ADP1148-3.3, ADP1148-5," Datasheet, pp. 1-14, 1997
	Archer, William R., "Current-Driven Synchronous Rectifier," Motorola TMOS Power FET Design Ideas, BR316, pp. 9-10, 1985
	Archer, William R., "Current Drives Synchronous Rectifier," EDN, p. 279, 11/28/85
	Blanchard, Richard, et al., "MOSFETs, Schottky Diodes Vie for Low-Voltage-Supply Designs," EDN, p. 197, 06/28/84
	Borghi et al., "Discontinuous Conduction Mode Power Switching Regulator IC," PCI October 1988 Proceedings, pp. 31-41, 10/88
	Brown, Marty, "Practical Switching Power Supply Design," pp. 20-34, Academic Press, Inc., 199
	Business Wire, "Micro Linear announces first single-chip power controller for notebook computers," 04/16/92
	Casey, L.F., "Circuit Design For 1-10 MHZ DC-DC Conversion," Massachusetts Institute of Technology ScD. Thesis, Fig. 3-15, pp. 73-80, 1989
	Cassani, John C. et al., "Sophisticated Control IC Enhances 1MHz Current Controlled Regulator Performance," Proceedings of HFPC, May 1992, pp. 167-173.
	Chetty, P.R., "DC timers control dc-dc converters" Electronics, pp. 121 & 123, 11/13/75
	Chryssis, George, "High-frequency switching power supplies," pp. 144-152 and 180-181, McGraw-Hill, 1989
	Dell Computer Corporation, "Dell Computer Corporation Introduces Advanced Notebook PC," (alleged to contain UC1895, see Unitrode Advance Information Datasheet 10/05/92), 09/91
	Dinsmore, D., "Dual regulator handles two input voltages," EDN, 01/21/93
	Fisher, R. A. et al., "Performance of Low Loss Synchronous Rectifiers in a Series-Parallel Resonant DC-DC Converter," Proceedings of the Fourth Annual IEEE Applied Power Electronics Conference and Exposition, pp. 240-246, 03/89
	Gauen, Kim, "Synchronous Rectifier Improves Step-Down Converter Efficiency," PCIM, pp. 8, 11-12 & 14-15, 04/93

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Gontowski et al., "Advanced New Integrated Circuits For Current-Mode Control," Proceedings of the Power Electronics Show and Conference, pp. 341-352, 10/86
	Goodenough, F., "Dozing IC Op Amps Wake Up For Input Signal," Electronic Design, 12/05/91
	Goodenough, Frank, "Synchronous Rectifier UPS PC Battery Life," Electronic Design, pp. 47-53, 04/16/92
	Goodenough, Frank, "Low-Voltage Analog ICs Wait in the Wings," Electronic Design, 09/03/92
	Goodenough, F., "Raise Switcher Efficiency Above 90%," Electronic Design, 01/21/93
	Gottlieb, I. M., "Practical Power-Control Techniques," Howard W. Sams & Co., pp. 116-120, 1987
	Gottlieb, I. M., Electronic Power Control, TAB Books, pp. 107-111, 1991
	Gracie, Paul D., "Intermittent Converter Saves Power," EDN, p. 151, 09/01/89
	Graf, Rudolf F., "Modern Dictionary of Electronics," 6th Edition, pp. 402-03, 1984
	Grant, Duncan A. et al., "POWER MOSFETS, Theory and Application," pp. 239-256, Wiley-Interscience, 1989
	Harris Semiconductor, Hodgins et al., "HIP 5060 Family of Current Mode Control ICs Enhance 1 MHZ Regulator Performance," Application Note AN9212.1, pp. 11-191 to 11-197, 1992
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 04/94
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Preliminary Datasheet, 01/92
	Harris Semiconductor, "HIP 5060 Power Control IC Single Chip Power Supply", Datasheet, 05/92
	Hewett, S., "Improved Switched Mode Power Supply Regulation by Eliminating Turn-off Spikes," IBM Technical Disclosure Bulletin, Vol. 31, No. 4, pp. 97-98, 09/88
	Hnatek, Eugene R., "Design of Solid State Power Supplies," Third Edition, pp. 65-70, Van Nostrand Reinhold, 1989
	Horowitz & Hill, "The Art of Electronics," pp. 356-359, Cambridge University Press, 1989
	Huffman, B., "Efficiency and Power Characteristics of Switching Regulator Circuits," Application Note 46, Linear Technology, 11/91
	Ikeda, S. et al., "Power MOSFET for Switching Regulator," International Telecommunications Energy Conference, 10/82
	Impala Linear, "ILC6311 Synchronous 3A Switching Regulator With Auto-Light Load Mode," Preliminary Datasheet, pp.30-38, January 1997
	Impala Linear, "ILC6350 Dual Output Synchronous Step-Down DC-DC Controller," Advanced Information Preliminary Datasheet, pp. 1-6, January 1997
	Impala Linear, "ILC6310 Synchronous Step-down DC-DC Converter With Auto Light-Load Mode Select," Final Datasheet, pp. 21-38, June 1996

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Impala Linear, "ILC6330 13A Adjustable Synchronous DC-DC Controller," Preliminary Datasheet, pp. 39-41, June 1996
	International Rectifier, "IR Application Note AN-978, HV Floating MOS Gate Driver ICs, Full Bridge With Current Mode Control," Application Note from web page, Date Unknown
	International Rectifier, "IR Application Note AN-978, HV Floating MOS-Gate Driver ICs, A Typical Block Diagram," Application Note from web page, Date Unknown
	International Rectifier, Clemente et al., "HV Floating MOS-Gate Driver IC," Application Note AN-978A, 1990
	Intersil, "ISL6223 Mobile Microprocessor CORE Voltage Regulator Multi-Phase Buck PWM Controller," Datasheet, 03/01
	Kassakian, J. et al., "Principles of Power Electronics," pp. 103-165, Addison-Wesley Publishing Company, 1991
	Kerridge, Brian, "Battery power breeds efficient regulators," EDN, pp. 103-108, 03/18/93
	Lee, Y. S. and Cheng, Y. C., "A 580 kHz switching regulator using on-off control," Journal of the Institution of Electronic and Radio Engineers, Vol. 57, No. 5, pp. 221-226, 09/87
	Lee, et al., "Design of Switching Regulator with Combined FM and On-Off Control," IEEE Transactions on Aerospace and Electronic Systems, Vol. AES-22, No. 6, pp. 725-731, 11/8
	Linear Technology, "LT1074 Switching Regulator," Preliminary Datasheet, 06/89
	Linear Technology, "LT1072 1.25A High Efficiency Switching Regulator," Datasheet, 1990
	Linear Technology, "New Device Cameos," Linear Technology Magazine, 10:18-19 1992
	Linear Technology, "LTC1148/LTC1148-3.3/LTC1148-5 High Efficiency Synchronous Stepdown Switching Regulator," Preliminary Datasheet, 11/92
	Linear Technology, Wilcox, M., "LT1158 Half Bridge N-Channel Power MOSFET Driver," Datasheet, 1992
	Linear Technology, Williams, J., Application Note 29, "Some Thoughts on DC-DC Converters," 1990 Linear Applications Handbook, pp. AN29-1 to AN29-44, 10/88
	Linear Technology, "LT1524/LT3524 Regulating Pulse Width Modulator," 1990
	Linear Technology, "LT1432 5V High Efficiency Step-Down Switching Regulator Controller," 1992 Linear Databook Supplement, pp.4-145 to 4-171.
	Linear Technology, "LT1170/LT1171/LT1172 100kHz 5A, 2.5A, 1.25A High Efficiency Switching Regulators," Data Sheet, 1991
	Linear Technology, "LT1271/LT1269 4A High Efficiency Switching Regulators," Data Sheet, 1992
	Linear Technology, Pietkiewicz et al., "DC-DC Converters for Portable Computers," Design Note 52, 1991
	Linear Technology, Nelson, C., App. Note 19, "LT-1070 Design Manual," 06/86

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
	APPLICANT Dittmer et al.	
	FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Linear Technology, "LTC1873 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller With 5-Bit VID," Datasheet, 1999
	Linear Technology, "LTC1878 High Efficiency Monolithic Synchronous Step-Down Regulator," Initial Release, Final Electrical Specifications, May 2000
	Linear Technology, "LTC1702 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller," Datasheet, 1999
	Linear Technology, Williams, J., App. Note 25, "Switching Regulators for Poets," 09/87
	Linear Technology, "LT1846/1847, LT3846/3847 Current Mode PWM Controller," Datasheet, 1990
	Linear Technology, "LTC1703 Dual 550 kHz Synchronous 2-Phase Switching Regulator Controller with 5-Bit VID," Datasheet, 1999
	Linear Technology, "LTC1735 High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1998
	Linear Technology, "LTC1736 5-Bit Adjustable High Efficiency Synchronous Step-Down Switching Regulator," Datasheet, 1999
	Linear Technology, "LTC1775 High Power NO RSENSE TM Current Mode Synchronous Step-Down Switching Regulator," Datasheet, 1999
	Linear Technology, Williams, J., Application Note 35, "Step Down Switching Regulators," 1990 Linear Applications Handbook, pp. AN35-1 to AN35-32, 8/89
	Linear Technology, "LTC1436A/LTC1436A-PLL/LTC1437A High Efficiency Low Noise Synchronous Step-Down Switching Regulators," Datasheet, 1996
	Linear Technology, "LTC1438/LTC1439 Dual High Efficiency, Low Noise, Synchronous Step-Down Switching Regulators," Datasheet, 1997
	Linear Technology, Nelson, C., "The LT1432:5 Volt Regulator Achieves 90% Efficiency," Linear Technology Magazine, Vol. 2, No. 1, pp. 18-19, 2/92
	Linear Technology, Pietkiewicz, S., "A Low-Voltage, Micro-Power 1 Amp Switching Regulator," presented at the International Solid State Circuits Conference, 1990
	Linear Technology, LT1073 Micropower DC-DC Converter Adjustable and Fixed 5V, 12V," Datasheet, 1991
	Linear Technology, "LTC1538-AUX/LTC1539 Dual High Efficiency, Low Noise, Synchronous, Step-Down Switching Regulators," Datasheet, 1999
	Linear Technology, "LTC1142/LTC1142L/LTC1142HV Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995
	Linear Technology, "LTC1149/LTC1149-3.3/LTC1149-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1993

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Linear Technology, "LTC1627 Monolithic Synchronous Step-Down Switching Regulator," Datasheet, 1998
	Linear Technology, "LTC1159/LTC1159-3.3/LTC1159-5 High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1994
	Linear Technology, "LTC1435 High Efficiency Low Noise Synchronous Step-Down Switching Regulator," Datasheet, 1996
	Linear Technology, "LTC1267/LTC1267-ADJ/LTC1267-ADJ5 Dual High Efficiency Synchronous Step-Down Switching Regulators," Datasheet, 1995
	Linear Technology, "LTC1266/LTC1266-3.3/LTC1266-5 Synchronous Regulator Controller for NB or P-Channel MOSFETs," Datasheet, 1995
	Markus, John, "Guidebook of Electronic Circuits," pp. 647 & 649, 1971
	Maxim Integrated Products, Inc., "MAX638 Fixed +5V CMOS Step-Down Switching Regulator," Maxim 1989 Integrated Circuits Data Book, pp. 6-57 to 6-64, 1989
	Maxim Integrated Products, Inc., "MAX782/MAX786 Notebook Computer Power Supplies," Advance Information Data Sheet, February 1993, pp.1-8.
	Maxim Integrated Products, "MAX1630-MAX1635 Multi-Output, Low-Noise Power Supply Controllers for Notebook Computers," Datasheet Rev. 3; 04/97
	Maxim Integrated Products, "MAX798 High-Accuracy Step-Down Controller With Synchronous Rectifier for CPU Power," Datasheet, 12/96
	Maxim Integrated Products, "MAX796/MAX797/MAX799 Step-Down Controllers With Synchronous Rectifier for CPU Power," Datasheet Rev. 3a; 11/97
	Maxim Integrated Products, Inc., MAX782, Addendum to Advance Information Sheet and EV Kit Document, bearing Bates numbers L07760 -007785, contains dates in 2/93 and 3/93 (MAX782 Advance Information Data Sheet cited above)
	Maxim Integrated Products, Inc., "MAX635/36/37 Fixed Output CMOS Inverting Switching Regulators," Maxim 1989 Integrated Circuits Data Book, pp. 6-49 to 6-46, 1989
	Maxim Integrated Products, Inc., "MAX639 High-Efficiency, +5V Adjustable Step-Down Switching Regulator," Datasheet, 12/91
	Maxim Integrated Products, Inc., "MAX635/636/637 Preset/Adjustable Output CMOS Inverting Switching Regulators," Datasheet, Date Unknown
	Maxim Integrated Products, "MAX782 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet Rev. 2; 5/94
	Maxim Integrated Products, Inc., "MAX783 Triple-Output Power-Supply Controller for Notebook Computers," Datasheet, 05/94

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Maxim Integrated Products, "MAX887 100% Duty Cycle, Low-Noise, Step-Down PWM DC-DC Converter," Datasheet, 09/96
	Maxim Integrated Products, Inc., "MAX746 High-Efficiency, PWM, Step-Down, N-Channel DC-DC Controller," Datasheet, 11/93
	Maxim Integrated Products, Inc., "MAX747 High-Efficiency PWM, Step-Down P-Channel DC-DC Controller," Datasheet, 09/93
	Maxim Integrated Products, Inc., "MAX777L/MAX778L/MAX779L Low-Voltage Input, 3V/3.3V/5V/ Adjustable Output, Step-Up DC-DC Converters," Datasheet, 07/96
	Maxim Integrated Products, "MAX767 5V-to-3.3V, Synchronous, Step-Down Power-Supply Controller," Datasheet Rev. 2; 08/94
	Meakin, Mike, "The LM3578 Switching Power Regulator," Electronic Engineering, pp. 47-52, 07/86
	Micro Linear Corporation, "ML4861 Low Voltage Boost Regulator," Preliminary Datasheet, July 1992
	Micro Linear Corporation, "ML 4822 DC/DC Converter Controller for Portable Computers," Datasheet, 08/91
	Micro Linear Corporation, "ML4862 EVAL User's Guide," 06/92
	Micro Linear Corporation, "ML4873 Battery Power Control IC," Datasheet, 01/97 (preliminary version 03/93 - cited below)
	Micro Linear Corporation, "ML4862 Battery Power Control IC," Datasheet, 03/97
	Micro Linear Corporation, "ML4862 Battery Power Control IC," Advance Information Datasheet, 07/92
	Micro Linear Corporation, "ML4860 Battery to DC Power Control IC for Portable Systems," Advanced Information, 02/92
	Micro Linear Corporation, "ML4873 Battery Power Control IC," Advance Information Data Sheet, March 15, 1993, pp.1-8.
	Myers, R. and Peck, R., "200-kHz Power FET Technology in New Modular Power Supplies," Hewlett-Packard Journal, 08/81
	NASA Jet Propulsion Laboratory, * "Synchronous Half-Wave Rectifier," 7/89
	National Semiconductor Corporation, "LM1578/LM2578/LM3578 Switching Regulator," Preliminary Datasheet, 1987
	Patel, Raoji, "Using Bipolar Synchronous Rectifiers Improves Power Supply Efficiency," Proceedings of the Power Sources Conference, 11/84
	Patel, R., "Bipolar synchronous rectifiers cut supply losses," EDN, 04/04/85
	Quinnell, Richard A., "Analog IC Combines Five Functions for Battery Power Management," EDN, 04/23/92

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Redl et al., "Frequency Stabilization and Synchronization of Free-Running Current-Mode Controlled Converters," PESC '86 Record, pp. 519-530, 1986
	Redl, et al., "Overload-Protection Methods For Switching-Mode DC/DC Converters: Classification, Analysis, and Improvements," PESC '87 Record, pp. 107-118, 1987
	Rippel, W.E., "Synchronous Half-Wave Rectifier," NASA Jet Propulsion Laboratory Technical Support Package Vol. 13, No. 7, Item #15, 7/89
	Sakai, E. and Harada, K., "A New Synchronous Rectifier Using Bipolar Transistor Driven by Current Transformer," Fourteenth International Telecommunications Energy Conference, pp. 424-429, 10/92
	Sakai, E. and Harada, K., "Synchronous Rectifier Using a Bipolar Transistor Driven by Current Transformer," Journal of the Society of Electronic Data Communication, Vol. J-74-B-I, No. 8, pp. 639-646, 08/91 (in Japanese, with translation)
	Savant, C.J., Jr., et al., "Electronic Design: Circuits and Systems," pp. 612-613, The Benjamin/Cummings Publishing Co., 1991
	Shepard, J., "Powering portable systems," EDN, 11/05/92
	Siliconix, "Si91XX Synchronous Buck Controller," Objective Specification, 12/20/90
	Siliconix, "Siliconix Si9110/Si9111," Datasheet, 10/87
	Siliconix, "Synchronous Rectification," Design Ideas, 10/80
	Siliconix, "Si9150 Synchronous Buck Regulator Controller, S-42677, Rev. D," Datasheet, 2/14/95
	Siliconix, "High-Efficiency Buck Converter for Notebook Computers," Application Note AN92-4, Date Unknown
	Siliconix, "Designing DC/DC Converters with the Si9110 Switchmode Controller," Siliconix Power Products Data Book, 1991
	Siliconix, "Si9150CY/BCY Synchronous Buck Converter Controller," Preliminary Data Sheet, 10/08/92
	Siliconix, "Si9150 Synchronous Buck Converter Controller," Objective Specification, handwritten pp. 7-17, 9/10/91
	Siliconix, Si9150 documents bearing Bates numbers U040269-71, 9104
	Soclof, Sidney, "Applications of Analog Integrated Circuits," Figure 2.25, pp. 74-75, Prentice-Hall, Inc. 1985
	Sokal et al., "Control Algorithms and Circuit Designs For Optimally Flyback-Charging an Energy-Storage Capacitor," IEEE Fifth Applied Power Electronics Conference, pp. 295-301, 1990
	Steigerwald, R., "High-Frequency Resonant Transistor DC-DC Converters," IEEE Transactions on Industrial Electronics, Volume IE-31, Number 2, pp. 181-191, 05/84
	Taylor, "Flyback Converter," Electronic Engineering, p. 23, July, 07/76

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Toyoda, "SB3012P Step Down DC-DC Converter Controller," Datasheet, March 1997
	Toyoda, "SB3030P Step Down DC-DC Converter Controller," Datasheet, December 1996
	Toyoda, "SB3011P Step Down DC-DC Converter Controller," Datasheet, March 1997
	Toyoda, "SB3052P Dual Channel Step Down DC-DC Converter Controller," Datasheet, February 1998
	Toyoda, "SB3020P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997
	Toyoda, "SB3010P Synchronous Stepdown DC-DC Converter Controller," Datasheet August 10, 1995
	Toyoda, "SB3013P Step Down DC-DC Converter Controller," Datasheet, March 1997
	Toyoda, "SB3050P Dual Channel Step Down DC-DC Converter Controller," Datasheet, March 1997
	Toyoda, "SB3031P Step Down DC-DC Converter Controller," Datasheet, December 1996
	Uchida, Takahito, "Control Circuit for Switching Regulator," Japanese Inventor Associated Disclosed Technology Publication No. 92-2362, published 2/15/92 (in Japanese, with translation)
	Unitrode, "Using Bipolar Synchronous Rectifiers Improves Power Supply Efficiency," Application Note U-103, 1989-1990 Unitrode Semiconductor Databook and Application Notes, pp. 12-88 to 12-94, 6/85
	Unitrode, "UC1846/7, UC2846/7, UC3846/7 Current Mode PWM Controller," Datasheet, 1/97
	Unitrode, "UCC29421/2, UCC39421/2 Multimode High Frequency PWM Controller," Preliminary Datasheet, 10/1999
	Unitrode, "UC1874-1,-2, UC2874-1,-2, UC3874-1,-2 High Efficiency, Synchronous Step-Down (Buck) Controllers," Datasheet, 02/1998
	Unitrode, "UC1895, UC2895, UC3895 Synchronous Rectifier Buck PWM Controller," Advance Information Datasheet, 10/06/92
	Unitrode, "UC1870-1/-2, UC2870-1/-2, UC3870-1/-2 High Efficiency, Synchronous, Step-Down (Buck) Controllers," Datasheet, 08/1998
	Unitrode, "UCC3941-3/-5/-ADJ 1V Synchronous Boost Converter," Preliminary Datasheet, 3/97
	Unitrode, "UCC19411/2/3, UCC29411/2/3, UCC39411/2/3 Low Power Synchronous Boost Converter," Preliminary Datasheet, 4/98
	Unitrode, "UCC1582, UCC2582, UCC3582 High Efficiency Synchronous, Step Down Controller," Preliminary Datasheet, 1/97
	Wilcox, M., "The LT1158: Low Voltage, N-Channel Bridge Design Made Easy," Linear Technology Magazine, Vol. 2, No. 1, 2/92
	Williams, J. and Huffman, B., "Proper instrumentation eases low-power dc/dc converter design," EDN, 10/27/88
	Williams, J., "Basic Principles and Ingenious Circuits Yield Stout Switchers," EDN, 01/18/90

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Williams, J., "Signal conditioning circuits use *power design techniques," EDN, 08/20/87
	Williams, J., "Employ pulse-width modulators in a wide range of controllers," EDN, 09/02/81
	Williams, J., "Switching regulator takes on more power," Electronic Product Design, 01/86
	Williams, J., "Design dc-dc converters to catch noise at the source," Electronic Design, 10/15/81
	Williams, J., "Conversion techniques adapt voltages to your needs," EDN, 11/10/82
	Williams, J., "Special circuit-design techniques enhance regulator performance," EDN, 09/01/83
	Williams, J., "Use low-power design methods to condition battery outputs," EDN, 10/18/84
	Williams, J., "Chopper amplifier improves operation of diverse circuits," EDN, 03/07/85
	Williams, J., "Refine V/F-converter operation with novel design techniques," EDN, 05/30/85
	Williams, J. and Huffman, B., "Design dc/dc converters for power conservation and efficiency," EDN, 11/10/88
	Williams, J. and Waller, B., "Performance-Enhancement Techniques for Three-Terminal Regulators," New Electronics, 10/04/83
	Williams, J. and Huffman, B., "Switched-capacitor networks simplify dc/dc-converter designs," EDN, 11/24/88
	Williams, J., "Regulator IC speeds design of switching power supplies," EDN, 11/12/87
	Williams, J., "Micropower circuits assist low-current signal conditioning," EDN, 08/06/87
	Williams, J. and Huffman, B., "Precise converter designs enhance system performance," EDN, 10/13/88
	Williams, J. and Dendinger, S., "Simplify feedback controllers with a 2-quadrant PWM IC," EDN, 05/26/83
	Williams, J., "Bridge forms synchronous rectifier," EDN
	Williams, J., "Designing supplies for powering LCD backlighting," EDN, 10/29/92
	Williams, J., "1.5 to 5V converter supplies 200mA," EDN, 10/15/92
	Williams, J., "Design linear circuits that serve digital system needs," EDN, 04/27/89
	Williams, J., "Clever techniques improve thermocouple measurements," EDN, 05/26/88
	Williams, J., "Design techniques extend V/F-converter performance," EDN, 05/16/85
	Williams, J., "Design linear circuits for 5V operation," EDN, 05/02/85
	Williams, J., "Considerations for Five Volt Linear Circuits," Professional Program Session Record 20, Circuits for Analog Signal Processing and Data Conversion is Single +5V Supply Systems, Wescon/85, 11/85
	Williams, J., "Analog circuits operate from a 1.5V cell," EDN, 09/19/85
	Williams, J., "Astute designs improve efficiencies of linear regulators," EDN, 08/17/89
	Williams, J., "Galvanically isolated switching supplies provide high power," EDN, 11/26/87

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. LT-167	SERIAL NO. 10/722,808
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Dittmer et al.	
		FILING DATE November 26, 2003	GROUP 2838

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
	Williams, J., "Correcting power-supply problems," EDN, 10/10/91

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.